FEDOROV, V.A.

Public traffic inspector. Put' i put. khoz. 5 no. 1:30 Ja '61.
(MIRA 14:5)

1. Starshiy inzh. Moskovsko-Kurskoy distantsii puti Moskovskoy dorogi.

(Traffic safety)

FEDOROV, V.A.

Improvement of the PI-PChDTs-56a test stand. Avtom., telem.i sviaz' 6 no.11:36-38 N '62. (MIRA 15:11)

1. Starshiy inzh. 1-y Rizhskoy distantsii signalizatsii i svyazi Latviyskoy dorogi.
(Railroads—Electronic equipment)

FEDOROV, V.A., kand.tekhn.nauk

Traffic capacity of passenger facilities. Vest.TSNII MPS 21 no.6:48-49 '62. (MIRA 15:9)

(Railroads--Station service)

SHIBER, R.A.; KRUGLYY, G.T.; BAZHOV, I.S., inzh., retsenzent; SAMOKHVALOV, S.F., inzh., retsenzent; FEDOROV, V.A., inzh., retsenzent; KRUPNOV, S.A., inzh., retsenzent; YESHCHIN, S.B., inzh., retsenzent; SARANTSEV, Yu.S., inzh., red.; KHITROVA, N.A., tekhn. red.

[Design, maintenanbe and repair of railroad cars] Ustroistvo i remont vagonov. Moskva, Transzheldorizdat, 1963. 395 p. (MIRA 16:6)

(Railroads—Cars)

FEDOROV, V.A., kand. tekhn. nauk

Improving the operation of passenger stations with car processing and maintenance facilities. Zhel. dor. transp. 45 no.3:27-31 Mr '63. (MIRA 16:6)

(Railroads—Management)

FEDOROV, V. A.

"Post War Production of Machines for Plant Protection"
Sel'khozmashina, No. 4, 1948, pp. 17-22.

FEDOROV, V. [illegible]

"OKS Sprayer-duster for the Forest Conservation Stations," Sel'khozmashina, no. 7, 1949, pp. 17-18. 58.8 Se42

So: Sira SI90-~~15~~ 53, 15 Dec. 1953

[illegible]OV, V. A.

"Something New in the Mechanization of Plant Protection," Sel'khozmashina, no. 4, 1952, p. 2. 58.3 Se42.

So: Sira S190-~~15~~ 43, 15 Dec. 1953

FEDOROV, V. A.

Mashiny i apparaty dlia zashchity rastenii ot vreditelei i boleznei /Machines and apparatus for protecting plants from pests and diseases/. Izd. 2-e, isprav. i dop. Mashgiz., 1953. 303 p.

SO: Monthly List of Russian Accessions, Vol. 7 No. 1 April 1954.

FEDOROV, V.A., laureat Stalinskoy premii; GORBATOV, P.P., kandidat tekhnicheskikh nauk.

New machines and implements for cultivating vegetable crops.
Sel'khozmashina no.1:3-5 Ja '54 (MLRA 7:1)

LAYKHTER, E.G.; CHUMAK, A.V., inzh., red.; BEZHUCHKIN, I.P., kand.tekhn.
nauk, red.; ZANIN, A.V., kand.tekhn.nauk, red.; ZVOLINSKIY, N.P.,
inzh., red.; IVANOV, I.S., inzh., red.; KLETSKIN, M.I., inzh., red.;
PETROV, G.D., kand.tekhn.nauk, red.; PUSTYGIN, M.A., doktor tekhn.
nauk, red.; RABINOVICH, I.P., kand.tekhn.nauk, red.; RUDASHEVSKIY,
D.Sh., kand.tekhn.nauk, red.; SINEOKOV, G.N., doktor tekhn.nauk, red.;
SYSOYEV, N.I., kand.tekhn.nauk, red.; FEDOROV, V.A., inzh., red.;
CHAPKEVICH, A.A., kand.tekhn.nauk, red.; PONOMAREVA, A.A., tekhn.red.

[Bibliographic manual on tillage machinery and implements] Biblio-
graficheskii spravochnik po pochvoobrabatyvaiushchim mashinam i oru-
diiam. Moskva, Gosplanizdat. No.2. [Literature in the Russian
language from 1730-1955] Literatura na russkom iazyke za 1730-1955 gg.
Pod red. G.N.Sineokova. 1959. 263 p. (MIRA 13:9)

1. Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'sko-
khozyaystvennogo mashinostroyeniya.
(Bibliography--Agricultural machinery)

FEDOROV, V.A., inzh.

Automation of the work processes of agricultural machinery and tractor devices. Trakt.i sel'khozmash. 32 no.9:22-23 S '62. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Agricultural machinery) (Tractors)

USSR / Cultivated Plants. Fodders. M-4

Abs Jour: Ref Zhur-Biol., No 6, 1958, 25100

Author : Fedorov, V.A.
Inst : ~~Not given~~
Title : Corn for Green Feed and Hay

Orig Pub: Kukuruza, 1957, No 3, 39-43

Abstract: According to the findings of experimental institutions, kolkhozes and sovkhozes, the highest corn green mass yield in Tambovskaya Oblast' was obtained with continuous row planting with a seeding rate of 100 kg. per ha. For use as hay, good results were gotten from the rapid ripening varieties of corn with continuous row sowing either pure or mixed with Sudan grass. -- B.K. Flerov

Card 1/1

USSR/Cultivated Plants - Fodders. M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53667

Author : Kotova, G.P., Fedorov, V.A.
Inst : Tambovskaya oblastnaya sel'skokhozyaystvennaya opytnaya stantsiya
Title : Methods of Sowing Corn for Green Feed in the Central Chernozem Belt.

Orig Pub : Zemledeliye, 1957, No 5, 32-39

Abstract : This article gives data gathered by experimental institutions and kolkhozes (collective farms) of the Central Chernozem belt. In areas with better moisture supply, it is more expedient to sow by the continuous method. Under the conditions of the South and especially the Southeast Central Chernozem belt, wide row (45 cm) and the square-pocket (45 x 45 cm) planting is more effective. Good results are produced by the mixture of corn and the Sudan grass. The leguminous components improve the quality of the green stuff but in isolated cases they lower the yield. -- B.K. Flerov

Card 1/1

FEDOROV, Vladimir Aleksandrovich; KAREV, Vitaliy Mikhaylovich;
PESHKOV, V.P., red.; POPOV, V.N., tekhn. red.

[Green fallow] Zaniatyi par. Tambov, Tambovskoe knizhnoe izd-vo, 1961. 62 p. (MIRA 16:6)
(Tambov Province—Tillage)

FEDOROV, V.A.; KIRILLOV, V.Ye.

Millet in Tambov Province. Zemledelie 23 no.11:42-46 N '61.
(MIRA 14:12)

1. Tambovskaya oblastnaya gosudarstvennaya sel'skokhozyaystvennaya opytnaya stantsiya.
(Tambov Province--Millet)

FEDOROV, V.A.

A 600-year-old oak. Priroda no.6:79 Je '60.
(MIRA 13:6)

(Lokhvitsa—Oak)

FEDOROV, V.A., sadovod-lyubitel' (g.Lokhvitsa, Poltavskaya oblast');
KOLESNIKOV, V.A., prof.

"Nonblooming" apple tree. Priroda 49 no.5:122-123
My '60. (MIRA 13:5)

1. Moskovskaya sel'skokhozyaystvennaya akademiya im. K.A.
Timiryazeva (for Kolesnikov).
(Apple)

FEDOROV, V.A. (g.Lokhvitsa Poltavskoy oblasti)

"Primorskoi chempion" in tree form. Priroda 49 no.5:106
My '60. (MIRA 13:5)
(Currants)

[illegible]EV, V.A.; KOROCHENKO, G.G.; FILYUCHKIN, I.V.

Sensitive threshold device. Prib. i tekh. eksp. 8 no.6:175 N-D '63. (MIRA 17:6)

L 21463-65 [illegible]

ACCESSION NR: [illegible] S/2892/64/000/003/0030/0031

B+1

AUTHOR: Fedorov, V. A.; [illegible]

TITLE: Matrix method for determining the relative content of a given isotope within a sample

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 30-31

19

TOPIC TAGS: isotope, isotope content, [illegible] matrix method, activation analysis, fast neutron spectrum, [illegible]

ABSTRACT: It is often necessary to evaluate the relative abundance of a given isotope within an arbitrary sample consisting of several isotopes. A method is proposed based on the known total fast neutron or γ-quanta spectrum of the sample and the knowledge of the partial spectrum of each of the isotopes. The article presents the case of fast neutrons [illegible] the resulting method can also be used in [illegible]

ASSOCIATION: None

Card 1/2

Card 1/2

L 21402-65 EWT(m) DIAAP RM

S/2892/64/000/003/0032/0044

ACCESSION NR: AT5003181

AUTHOR: Doroshenko, G. G.; Filyushkin, I. V.; Fedorov, V. A.

TITLE: Fast neutron spectrometer

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 32-44

TOPIC TAGS: fast neutron, neutron spectrometer, scintillation spectrometer, stilbene crystal, radiation dosimetry

ABSTRACT: Fast neutron scintillation spectrometers are extremely efficient devices, but due to the almost rectangular line form and high γ-sensitivity, data from such spectrometers are difficult to process. The method of recording efficiencies published earlier by the authors (Izv. AN SSSR, Ser. fiz., 27, 10, 1308, 1963) yields very reliable fast neutron spectra, and the high efficiency of the scintillation spectrometers opens a real possibility for the measurement of the spectra of very weak neutron beams (e.g., 20 neutrons/cm^2·sec). The authors describe in detail a fast neutron spectrometer whose good linearity allows the attainment of an extremely low spectrometric resolution threshold (~80 kev on the emitted electron scale) at relatively high permissible loads (~4.10^3 c/sec). The

Card 1/2

L 24402-65

ACCESSION NR: AT5003281

30 x 35 mm cylindrical stilbene crystal is connected to an FEU-13 type photomultiplier. The article describes the electronic circuitry and gives the temporal diagram of the separation device pulses, the determination of the energy threshold, the shape of the Compton distribution, the ratio of the half-height energy to the maximum Compton electron energy as a function of the energy resolution (Cs 137 γ-quanta), the stilbene light yield as a function of emitted protons, and the inverse transposed stilbene crystal matrix. Test measurements of fast neutrons from Po-Be sources were in excellent agreement with the results of photoplate measurements and resonant cross section structure (neutron-oxygen inter- [illegible] Orig. art. has: 6 formulas, 9 figures, and 1 tables.

[illegible]

action) data. Orig. art. has: 4 formulas, 9 figures, and 3 tables.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: IP

NO REF SOV: 004 OTHER: 006

Card 2/2

L 24400-65

ACCESSION NR: AT5003284 S/2892/64/000/003/0065/0071

B+1

AUTHOR: Fedorov, V. A.; Doroshenko, G. G.

TITLE: The use of Kotel'nikov's theorem in the sepctrometry of continuous energy spectra of radiation

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 65-71

TOPIC TAGS: radiospectrometry, energy spectrum, radiation energy, Fredholm first order equation, integral equation, Kotel'nikov theorem, information theory

ABSTRACT: During the study of continuous radiation spectra, one frequently encounters the Fredholm first order integral equation

$$F(E') = \int f(E)K(E, E')\, dE, \quad (1)$$

connecting the differential distribution of pulse amplitudes F(E') with the differential energy radiation spectrum f(E). The present paper discusses the feasibility of an analytic representation of f(E) free from the usual shortcomings of the polynomial representation. It is based on the theorem due to V. A. Kotel'nikov (O propusknoy sposobnosti efira i provoloki v elektrosvyazi. Materialy k 1-mu Vsesoyuznomu s"yezdu, VEK, 1933), which is well known in information theory and

Card 1/2

L 24400-65

ACCESSION NR: AT7003284

which states that an arbitrary function can be represented exactly using frequencies between 0 and ω_{max} if the function is sampled at intervals π/ω_{max} seconds apart. The results show that by the use of the above-mentioned theorem one can indeed augment the accuracy of quadratures of approximate solutions of problems of spectrometry and obtain well defined systems of linear equations. Orig. art. has: 17 formulas and 1 figure.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, DP

NO REF SOV: 008 OTHER: 000

Card 2/2

L 24198-65 EWT(m)/EWA(h)

ACCESSION NR: AT5003285 S/2852/64/000/003/0072/0076

AUTHOR: Fedorov, V. A.; Doroshenko, G. G.

B+1

TITLE: Measuring device at the input of a nonlinear amplitude analyzer

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 72-76

TOPIC TAGS: nonlinear analyzer, amplitude analyzer, channel discriminator, channelization, radiation dosimetry

ABSTRACT: During amplitude analysis, it is necessary to separate the boundaries of the analyzer channels according to some given law. Such is the case in fast neutron spectroscopy (G. G. Doroshenko, I. V. Filyushkin, V. A. Fedorov, Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1965, p. 31) where [illegible] are [illegible] In the article, the authors describe in detail the circuitry and operation of an [illegible] which differs from other known setups by the use of a threshold element [illegible] determines [illegible]

Card 1/

L 24398-65

ACCESSION NR: AT5003285

determined by the number of pulses from the generator. Orig. art. has: 2 figures and formula.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, DP

NR REF SOV: 002 OTHER: 000

Card 2/2

L 24399-65 EWT(m)/EWA(h)

ACCESSION NR: AT5001286 S/2892/64/000/003/0077/0081

AUTHOR: Fedorov, Y. A.; Doroshenko, G. G.

3+1

TITLE: Sensitive stable amplitude discriminator

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 77-81

TOPIC TAGS: amplitude discriminator, monovibrator, nonlinear diode quadrupole, radiation dosimetry, radiospectrometer

ABSTRACT: The amplitude discriminator, one of the most important elements of a [illegible] device, is actually a nonlinear element generating a signal whenever [illegible] of the input signal exceeds the given discrimination threshold. A [illegible] designed [illegible] monovibrator having a minimum clear operating threshold on the order of [illegible] threshold is controlled by the most stable discriminating element - the diode [illegible] thermally stabilized), while the tube circuitry of the monovibrator [illegible] kind of zero-element whose possible drift practically does not affect the operation of the entire device. The especially high sensitivity of the monovibrator circuit is by a particular choice of tube operating points and by the

Card 1/2

L 24599-65

ACCESSION NR: AT5003286

use of the positive feed-back of the nonlinear diode quadrupole whose transfer co- [illegible] determined in an essential way by the magnitude of the input signal [illegible] G. G. Doroshenko, I. V. Filyushkin, Pribory i tekhnika eksperimenta, 6, 69, 1963). Orig. art. has: 7 formulas and 2 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, EC

NO REF SOV: 001 OTHER: 000

Card 2/2

L 23790-65 EWT(m)/EWA(h) S/2892/64/000/003/0101/0105 B+L

ACCESSION NR: AT5003290

AUTHOR: Doroshenko, G.G.; Barabanov, I.R.; Fedorov, V.A.

TITLE: The processing of spectra from monoenergetic neutrons behind water shielding using the method of counting efficiencies

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 101-105

TOPIC TAGS: neutron spectrum, monoenergetic neutron scattering, water shielding, counting efficiency method, reactor shielding

ABSTRACT: The method of counting efficiencies (see, e.g., G.G. Doroshenko, et al., Neutron Dosimetry Proc. of Symposium on neutron detection, dosimetry and standardization, Harwell, Dec. 10-14, 1962 International Atomic Energy Agency, Vienna, vol. 1, 1963, p. 337) in the single-scattering approximation was applied to the study of spectra of monoenergetic neutrons behind water shielding. Monoenergetic 15.1 Mev neutrons originated from the accelerator reaction $D_1^2 + T_1^3 \to n + He_2^4$.

L 23790-65

ACCESSION NR: AT5003290

Data from a target at the center of a water-filled tank (simulating infinite geometry) were collected by Yu. A. Kazanskiy and V.A. Dulin. The results are compared with theoretical data by R. Aronson et al. (USAEC, Report NYO-6260, 1954 [illegible] exact Monte Carlo calculation of counting [illegible]

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NO REF SOV: 004 OTHER: 002

Card 2/2

L 23552-65 EWG(j)/EWT(1)/EWT(m)/EPF(c)/EWP(j)/EEC(b)-2/EWA(h)/EW[illegible](1)
Pc-4/Pr-4/Peb RM

ACCESSION NR: AT5003292 S/2892/64/000/003/0110/0124

AUTHOR: Doroshenko, G.G.; Fedorov, V.A.; Barabanov, I.R.; Grishin, Yu. [illegible]

TITLE: Analysis of a photomultiplier operating in the nonlinear region

55

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 3, 1964, 110-124

TOPIC TAGS: photomultiplier, saturated photomultiplier, scintillation counter, photomultiplier theory, sodium iodide scintillator, radiation dosimeter

ABSTRACT: Photomultipliers operating in the nonlinear region may exhibit valuable properties (see, e.g., G. G. Doroshenko, Ye. L. Stolyarova, Neutron Dosimetry. [illegible] detection [illegible] International Atomic Energy Agency, Vienna, vol. 2, 363, 1963). Since such operations may involve complicated processes, the authors carried out an analysis of photomultipliers working under high [illegible] data concerning the dependence [illegible] the system on the energy of secondary particles for [illegible] tolan, and naphthalene crystals) [illegible] the scintillation time of scintillators) and on the time constant of the RC load; on the other hand, the analysis

Card 1/2

L 23782-65

ACCESSION NR: AT5003292

[illegible] simple physical models of the observed events. The article also contains diagrams of the pulsed photomultiplier current for various scintillators at E [illegible] Mev, of the amplitude of the pulse [illegible] [illegible] (describable by a constant D), of the dependence of the current and voltage pulse amplitudes on T, of the saturation amplitude versus the scintillation constant, and of the current and voltage [illegible] results of theoretical calculations are [illegible] function [illegible] are in good agreement with present and previously published experimental data (G.G. Doroshenko, Ye. L. Stolyarova, Sbornik rabot po nekotorym voprosam [illegible]

[illegible]: 006 OTHER: 005

[illegible]-65 EWA(h)/EWT(l) Peb

ACCESSION NR: AP5005964

S/0048/65/029/002/0326/0327

AUTHOR: Fedorov, V.A.; Doroshenko, G.G.

TITLE: A sensitive stable pulse height discriminator /Report, 14th Annual Conference on Nuclear Spectroscopy held in Tbilisi, 14-22 Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.29, no.2, 1965, 326-327

TOPIC TAGS: pulse height analyzer

ABSTRACT: The circuit is given of a pulse discriminator for which great sensitivity and stability is claimed. The operation of the instrument is described briefly. The distinctive feature of the discriminator is the use of a nonlinear diode circuit in the positive feedback loop in such a way [illegible] remain on the linear portions of the characteristic [illegible] phase. A threshold sensitivity of 1 to 3 mV was achieved [illegible] the pulse length of 1 microsec and a [illegible] figure.

L 33619-65

ACCESSION NR: AP5005964

[illegible] Inzhenerno-fizicheskiy [illegible]

ENCL: 00

SUB CODE: EC, NP

NR REF SOV: 001

OTHER: 001

Card 2/2

TOLMACHEV, A.M.; FEDOROV, V.A.; PANCHENKOV, G.M.

Dependence of the height of an equivalent theoretical plate in ion exchange chromatography on ion mobility. Zhur. fiz. khim. 39 no.5:1168-1170 My '65. (MIRA 18:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

L 63471-65 EWT(m)/T

ACCESSION NR: AP5019798

UR/0076/65/039/0[illegible]/1780/1[illegible]

[illegible] A. M., Fedorov, V. A.; Panchenk[illegible] [illegible]

TITLE: Calculation of H.E.T.P. from ion mobilities [illegible] chromatography

[illegible] Zhurnal fizicheskoy khimii [illegible]

[illegible] exchange chromatography, ion mobility, [illegible] plate height equivalent, elution chromatography

ABSTRACT: The linear relationship between the H.E.T.P. (height equivalent of a theoretical plate) and the ion mobility in solution

$$u_x = m - nl_x, \qquad (1)$$

where u_x is the mobility of the Me_x^+ ion, l_x is the H.E.T.P. for this ion, and m and n are constants for the given experimental conditions, was verified for ions of variable valence. The effect of various factors [illegible] determined by elution chromatography [illegible]

[illegible]

ACCESSION NR: AP5019798

equal, relation (1) applies to alkali and alkaline earth elements. Constant π is independent of the elution rate v, solution concentration and properties of the ion exchange resin, but depends on the nature of [illegible] independent of the latter, but depends on the concentration and feed rate of the eluent and nature of the resin. The results obtained [illegible]

[illegible] necessary for [illegible] er or

[illegible]

[illegible] being neglec[illegible]

$$l_e = 1{,}64 r_0 + \frac{\lambda_x^{\sigma}}{(\lambda_x^{\sigma}+\beta)^2}\frac{0{,}142 r_0^2 v}{D_x} + \left(\frac{\lambda_x^{\sigma}}{\lambda_x^{\sigma}+\beta}\right)^2 \frac{0{,}266 r_0^2 v}{D_e(1+70 r_0 v)},$$

where r_0 is the resin particle radius, v is the velocity of the eluent, β is the volume of the eluent per unit volume of resin in the column, [illegible] are the effective internal and external diffusion coefficients of Me^+ [illegible] is the co[illegible] distribution of the Me_x^+ ion between the eluent [illegible] Orig.

Card 2/3

L 63471-65

ACCESSION NR: AP5019798

art. has: 2 figures, 1 table, 2 formulas.

ASSOCIATION: none

SUBMITTED: 09Sep64 ENCL: 00 SUB CODE: GC

NO REF SOV: 004 OTHER: 001

Card 3/3

L 1146-66 EWT(m)/ETC/EWG(m)/T DS/RM

ACCESSION NR: AP5023691 UR/0076/65/039/009/2259/2264
543.544

AUTHOR: Tolmachev, A. M.; 44,55 Fedorov, V. A. 44,55 44,55

TITLE: Study of the ion exchange properties of type X zeolite

41
B

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 9, 1965, 2259-2264

TOPIC TAGS: zeolite, cation, ion exchange

ABSTRACT: The ion exchange properties of type X zeolite were studied and compared with those of type A zeolite, which had been determined earlier. Exchange isotherms were obtained for various pairs of univalent cations, and the thermodynamic equilibrium constants $K_{thermod}$ and activity coefficients for these ions were calculated. From the values of $K_{thermod}$, the following selectivity series of type X zeolite for univalent ions was established:

$$\boxed{K^+ > Na^+ \geqslant Rb^+ > NH_4^+ > Cs^+ > Li^+ > (CH_3)_2NH_2^+,}$$

Card 1/2

L 1146-66

ACCESSION NR: AP5023691

3

which is almost the same as the selectivity series of type A zeolite:

$$K^+ > Na^+ > NH_4^+ > Rb^+ > Cs^+ > Li^+ > (CH_3)_2NH_2^+.$$

Thus, although the exchange capacities of type X are more constant than those of type A, the properties of both zeolites are basically similar. In both cases, the affinity for the zeolite is a function of the size and hydration energy of the ions. It is noted that type X has a high separatory capacity with respect to Rb^+ and Cs^+ ions ($K_{thermod} \approx 5$), the separation of which is of major practical importance. Orig. art. has: 4 figures, 2 tables, 4 formulas.

ASSOCIATION: Khimicheskiy fakul'tet, Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Chemistry Department, Moscow State University) 44,56

SUBMITTED: 08Sep64 ENCL: 00 SUB CODE: GC

NO REF SOV: 007 OTHER: 003

Card 2/2 GP

L 10548-66 EWT(m)/EPF(n)-2/EWA(h)

ACCESSION NR: AT5023166 UR/2892/65/000/004/0143/0146

AUTHOR: Doroshenko, G. G.; Fedorov, V. A.; Leonov, Ye. S. 30 B+1

TITLE: Scheme for the stabilization of the amplifying circuit of fast neutro spectrometer 19

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 4, 1965, 143-146

TOPIC TAGS: nuclear radiation spectrometer, fast neutron, thyratron, electronic amplifier, current stabilization, feedback circuit

ABSTRACT: The instability of the moment of ignition of a thyratron, as well as other factors leading to instability, associated with a change in the magnitude of the charge passing through the thyratron are compensated with a supplementary negative feedback circuit. In this case, the feedback circuit signal is read from a resistance connected in series with the thyratron. This signal repeats the shape of the light impulse, and the voltage of the peak detector at the outlet of the circuit is read subtracted from the outlet voltage of the peak detector of the main channel. To raise the efficiency of the stabilization scheme it is desirable that the magni-

Card 1/2

L 10548-66

ACCESSION NR: AT5023166

O

tude of the reference impulse be as large as possible. However, even with reference impulses equivalent to the impulses from the yield of protons with energies of about 15 Mev, the normal operation of the separation scheme was disrupted. This problem was solved by trial and error determinations of the amplitude and duration of the reference light [illegible] The article shows a diagram of the circuit. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP, EC

NR REF SOV: 006 OTHER: 000

Card 2/2 pw

FEDOROV, V.A.

Buffer operative storage for an electronic computer. Trudy MMTS no.10:103-111 '65. (MIRA 19:1)

FEDOROV, V.A.; TOLMACHEV, A.M.; PANCHENKOV, G.M.

Exchange equilibrium of univalent ions on the A-type synthetic zeolite. Zhur. fiz. khim. 38 no.5:1248-1253 My '64. (MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova. Submitted July 24, 1963.

L 28357-66 EPF(n)-2/EWA(h)/EWT(m) JD

ACC NR: AP6001697 SOURCE CODE: UR/0089/65/019/005/0460/0462

AUTHOR: Doroshenko, G. G.; Fedorov, V. A.; Leonov, Ye. S.

31
30
B

ORG: None

TITLE: Changes in fast-neutron spectrum after passages through aluminum, paraffin and water

19

SOURCE: Atomnaya energiya, v. 19, no. 5, 1965, 460-462

TOPIC TAGS: fast neutron, neutron spectrum, nuclear shielding

ABSTRACT: An attempt was made to investigate the fast-neutron spectra in thick aluminum, paraffin and water layers. A Po - Be source was used, being placed in a paraffin collimator with a 48-degree aperture angle. The investigated 70 x 70 cm sheets of aluminum and paraffin were placed at 25 cm from the source. The thickness of the aluminum layer was 44 cm, while the paraffin layer was 45 cm thick. The water layer thickness was 40 cm. The results of experiments were illustrated by three graphs. The first graph shows the fast neutron spectra before shielding and then after passing the aluminum layer. The interaction cross-section between neutrons and aluminum nuclei is also graphically illustrated. Similar

Card 1/2 UDC: 539.125.25

2

L 28357-66

ACC NR: AP6001697

curves were obtained for the paraffin layer. The third set of curves shows the fast neutron behavior in water and the interaction of neutrons with oxygen nuclei. A good coincidence in five structures was obtained for spectra before and after passing the aluminum shielding. As to the paraffin layer, the spectral line shape was determined by the interaction between neutrons and carbon nuclei. Orig. art. has: 3 graphs.

SUB CODE: 20 / SUBM DATE: 6[illegible]65 / ORIG REF: 009 / OTH REF: 001

Card 2/2

TOLMACHEV, A.M.; FEDOROV, V.A.; PANCHENKOV, G.M.; ZUYEVA, N.N.

Calculation of height equivalent of a theoretical plate in ion-exchange chromatography according to the mobilities of ions. Zhur. fiz.khim. 39 no.7:1780-1783 Jl '65.

(MIRA 18:8)

L 15795-66 EWT(1)/EWA(h)

ACCESSION NR: AT5023165

UR/2892/65/000/004/0141/0142

AUTHOR: Fedorov, V. A.; Doroshenko, G. G.

58

B+1

TITLE: Sensitive amplitude discriminator based on transistors

25

SOURCE: Moscow. Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 4, 1965, 141-142

TOPIC TAGS: transistorized circuit, semiconductor device, pulse amplitude

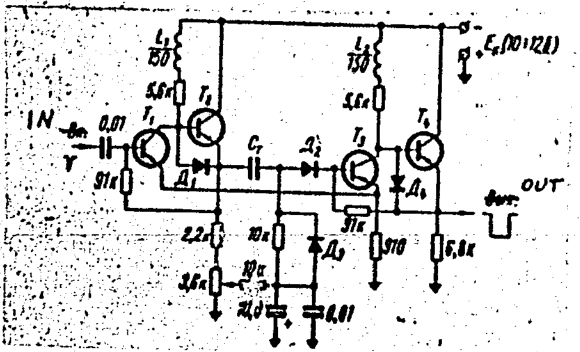
ABSTRACT: The article proposes the design of a sensitive amplitude discriminator with a short recovery time made of semiconductor elements as shown in enclosure 01. A special feature of the circuit is the use of the transistor emitter junction T_3 as one of the elements of a nonlinear quadripole in the reverse positive coupling circuit. The diodes D_1, D_2, and D_4 together with the emitting followers T_2 and T_4 make it possible to achieve the required fast action of the circuit while maintaining its high sensitivity. Practical testing of the circuit has shown that it is easily possible to attain a threshold on the order of 5 mv. The

Card 1/3

2

L 15795-66

ACCESSION NR: AT5023165 ENCLOSURE: 01



Basic circuit of the amplitude discriminator

Card 3/3

L 15795-66
ACCESSION NR: AT5023165

recovery time in this case was 0. 1 microseconds. Orig. art. has: 1 figure

ASSOCIATION: None

SUBMITTED: 00 ENCL: 01 SUB CODE: 09

NR REF SOV: 002 OTHER: 001

Card 2/3

DOROSHENKO, G.G.; FEDOROV, V.A.; LEONOV, Ye.S.

Change in the spectra of fast neutrons after passing through aluminum, paraffin, and water. Atom. energ. 19 no.5:460-462 N '65. (MIRA 18:12)

ACC NR: AP7005685 SOURCE CODE: UR/0413/67/000/002/0157/0158

INVENTOR: Fedorov, V. A.; Snezhkov, A. D.

ORG: None

TITLE: A mechanism for putting an engine into cruising conditions when there is a break in the wiring. Class 62, No. 190793

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 2, 1967, 157-158

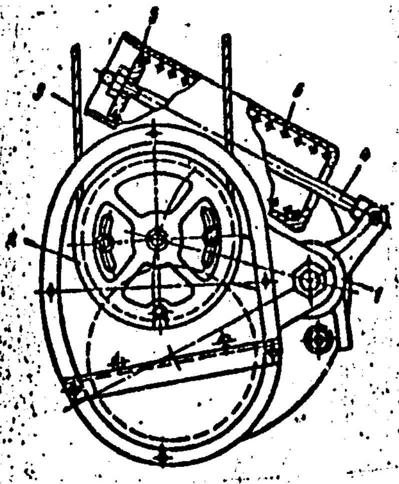
TOPIC TAGS: engine auxiliary equipment, internal combustion engine component

ABSTRACT: This Author's Certificate introduces a mechanism for putting an engine into cruising conditions when there is a break in the wiring. The unit consists of levers, springs which act on the levers through pistons with rods, and a cable control system. The spring which holds the cables under tension during normal operation of the wiring system is used for automatically putting the engine into cruising conditions when there is a break in the wiring. The mechanism contains a rocker with the end roller of the cable wiring in the control system fastened to one arm while the other arm is hinged to the piston rod. The spring acts on this rod and the rocker axle is connected through a cardan shaft to the mechanism which controls fuel delivery to the engine.

UDC: 629.13.01/06

Card 1/2

ACC NR: AP7005685



1—rocker; 2—end roller; 3—cable wiring; 4—rod; 5—piston; 6—spring

SUB CODE: ~~IE~~ 21/ SUBM DATE: 18Sep64

Card 2/2

L 36104-66 EWT(d)/EWP(1) IJP(c) BB/GG

ACC NR: AT6014304 (N) SOURCE CODE: UR/3118/65/000/010/0103/0111

AUTHOR: Fedorov, V. A.

52

B+1

ORG: none

16C

TITLE: A buffer operational storage device for an electronic computer

SOURCE: Mirovoy meteorologicheskiy tsentr. Trudy, no. 10, 1965. Ob"yektivnyy analiz i obrabotka meteorologicheskikh dannykh (Objective analysis and processing of meteorological data), 103-111

TOPIC TAGS: weather forecasting, computer control system, computer input unit, computer output unit, computer system, computer storage device, electronic computer

ABSTRACT: A buffer operational storage device (BOZU) based on magnetic operational storage devices and buffer coordinating units is used to operate the computer complex for weather forecasting at the SSSR World Meteorological Center. The BOZU provides simultaneous storage of information from different devices with the proper ordering and preprocessing of this information. It also controls the operation of all devices connected with the computer. In one array of the complex the unit automatically receives data from communications channels and records it on one of several buffer tapes to abbreviate the computer input process. The system can also predigest punched cards to expedite their input. The BOZU also accepts the computer output and expedites the dispatch of this information to such associated equipment as

Card 1/2

L 36104-66

ACC NR: AT6014304

0

automatic chart plotters and weather forecast transmission channels. The computer time utilization is so efficiently coordinated that in one of the most complex operational modes the receiving and transmitting of information from the computer requires only 30% of the computer time, leaving the remaining 70% for computer analysis. Variants of the system affect the capacity and efficiency of the system differently. Of primary importance in this respect is the digital order of the information and the method of coordinating and addressing the storage unit within the complex. A 24-digit output register provides 100% utilization of the 8-track buffer tape with 83% of this information being useful. Addressing the BOZU operational storage by a 3-cycle technique permits the complex to be expanded in capacity with the least expenditure of additional equipment. Orig. art. has: 2 tables and 6 figures.

SUB CODE: 09, 04/ SUBM DATE: none

LS

Card 2/2

FEDOROV, V.A.

Some changes in automatic interlocking networks of hump yards. Avtom., telem. i sviaz' 9 no.3:38 Mr '65.
(MIRA 18:11)

1. Starshiy inzh. Rizhskoy distantsii Pribaltiyskoy dorogi.

FEDOROV, V.A.

Some remarks on KB TsSh relay-type semiautomatic block systems.
Avtom. telem. i sviaz' 8 no.2:27 F '64. (MIRA 17:6)

1. Starshiy inzh. Rizhskoy distantsii signalizatsii i svyazi
Pribaltiyskoy dorogi.

TOLMACHEV, A.M.; FEDOROV, V.A.; PANCHENKOV, G.M.

Determination of the activity coefficients of monovalent ions in a type-A synthetic zeolite. Vest.Mosk.un.Ser.2:Khim. 19 no.4:7-12 Jl-Ag '64. (MIRA 18:8)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

MIRONOV, V.Ye.; KUL'BA, F.Ya.; FEDOROV, V.A.

Chloride complexes of lead II)and their reaction with alkali metal cations. Zhur.neorg.khim. 10 no.4:914-917 Ap '65.

(MIRA 18:6)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta, kafedra obshchey khimii.

FEDOROV, V. B.

ANGULAR DISTRIBUTION OF PARTICLES IN HIGH-ENERGY EXPLOSIVE SHOWERS

A.P. Mishakova, B.A. Nikolskiy, V.B. Fedorov

The paper covers a study of 39 burst showers generated by high-energy cosmic particles ($>10^{10}$ ev) in nuclear emulsion. The main part of these explosive showers had already been investigated by the authors in an earlier work.

The aim of this paper is to consider all errors (fluctuational and caused by measurements) that influenced the angular distribution of shower particles. This was necessary to verify the earlier conclusion that the angular distribution of shower particles in the centre-of-inertia system is asymmetric backwards (in the direction of angles 150-180°). This conclusion did not agree with the predictions of various theories of shower production. The main effort in this study was to determine the errors that are possible in determining the true direction of the shower axis. The direction of the primary particle may be taken as the directionof the shower axis; if this is impossible, then the direction of "the centre of gravity" of the shower is considered to be the direction of the shower axis.

A study has been made (experimentally and by the Monte Carlo method) of the deviation of the direction of the "centre of gravity" of the shower from that of the primary particle. It has been found that the amount of fluctuation in determining shower axis ins $0.17\lambda(\frac{1}{2})$, which corresponds to an error of 20° in determining the direction of the shower axis in the center-of-inertia system. An evaluation of widening due to this effect shows that the number of particles in the interval 0°- 30°

in the center-of-inertia system will diminish by ~22%. The total systematic error in the experimentally observed number of shower particles in the interval 0° - 30° in the center-of-inertial system amounts to ~25%.

The angular distributions of shower particles in the centre-of-inertial system have been obtained for 39 showers from 0° to 180°. The distributions indicate an essential anisotropy of shower particles moving rather uniformly forwards and backwards with respect to the direction of motion of the primary particles.

Thus, account of this error leads to a symmetrization of angular distribution in the centre-of-inertia system relative to the angle $\theta \approx \pi/2$. This conclusion is in agreement with the data of all other laboratories that were analysed in the paper.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11, July 1959

83712

S/056/60/038/004/005/048
B019/B070

24.7910

AUTHORS: Manenkov, A. A., Fedorov, V. B.

TITLE: An Investigation of the Width and Form of the Lines of the Paramagnetic Resonance Spectrum of the Cr^{+++}-Ion in Single Crystals of Corundum

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 4, pp. 1042-1046

TEXT: The authors have investigated the width and the form of the absorption lines of the electron paramagnetic resonance of the Cr^{+++}-ions in the corundum lattice at room temperature. The samples were single crystals of $Al_2O_3.Cr_2O_3$ with a relative chromium content of 10^{-5} to 10^{-2} (This concentration is the ratio of the number of paramagnetic chromium ions to that of the aluminum ions). The investigations were made at the frequency of 9375 Mcs with the magnetic field parallel to the trigonal axis of the crystal. From the fact that the width of the lines is not

Card 1/3

83712

S/056/60/038/004/005/048
B019/B070

An Investigation of the Width and Form of the Lines of the Paramagnetic Resonance Spectrum of the Cr^{+++}-Ion in Single Crystals of Corundum

altered when the sample is cooled from 300° to 77°K, the conclusion is drawn that the spin lattice interaction has no effect on the line width. The broadening of the lines ascribed to the magnetic dipole interactions of the spins. The authors next describe the measurements of the dependence of the widths, peak intensities, and the form of the lines on the concentration for different electron transitions. The results are shown in Figs. 1 and 2, and also in a table. The spectrum investigated consists of three lines corresponding to the electron transitions $3/2 \longrightarrow 1/2$, $-1/2 \longrightarrow 1/2$, and $1/2 \longrightarrow 3/2$. The lines corresponding to the first and the last transitions are equal and somewhat broader than the line corresponding to the second transition. The authors consider the larger broadening of the two lines as being due to lattice defects. The ratio of the widths and that of the peak intensities is nearly constant. The form of the lines corresponds nearly to a Gaussian curve, and for the highest concentration investigated here approaches a Lorentz curve; the forms of the lines differ very little. The authors compare the experimental data with the theory of the dipole broadening of the lines. It is found that with the help of the mechanism of dipole interaction and assuming an inhomogeneity

Card 2/3

83712

An Investigation of the Width and Form of the Lines of the Paramagnetic Resonance Spectrum of the Cr^{+++}-Ion in Single Crystals of Corundum

S/056/60/038/004/005/048
B019/B070

of the electric field in the crystal caused by lattice defects, it is possible to explain the results qualitatively, but not quantitatively. The line widths observed experimentally are somewhat less than the theoretical values due, presumably, to the exchange interactions. The authors thank A. S. Bebchuk, R. P. Bashuk, and L. N. Kharitonova for the preparation of the samples and measuring the concentrations. There are 2 figures, 1 table, and 3 references: 1 Soviet and 2 US.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics imeni P. N. Lebedev of the Academy of Sciences, USSR)

SUBMITTED: September 15, 1959

Card 3/3

44230

S/056/62/043/006/023/067
B102/B104

24.2200

AUTHORS: Prokhorov, A.M., Fedorov, V.B.

TITLE: Antiferromagnetism of free radicals

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43, no. 6 (12), 1962, 2105-2109

TEXT: The chemical stability of the organic free radical αα-diphenyl β-picrylhydracyl (I) is investigated. The e.p.r. spectrum of this radical was measured at 42 Mc in the range 4.2 - 0.15°K. Below 1°K the integral intensity of the e.p.r. lines vanished; this is explained by a reconstruction of the energy spectrum of the system of magnetic moments of the unpaired electrons (each of the I molecules has one) and their transition into an ordered antiferromagnetic state due to exchange interaction. Three samples of I, crystallized from their benzoleic solution, were investigated: two triclinic single crystals and crystalline powder. They were cooled down to 0.15°K by means of adiabatic demagnetization of iron-ammonium alum. The constant magnetic field was modulated with a frequency of 0.5 cps in order to observe

Card 1/3

Antiferromagnetism of free ...

S/056/62/043/006/023/067
B102/B104

resonance absorption. The signal-to-noise ratio was ~100 when working with the large crystal (25 mg). The absorption line appearing on the oscilloscope screen was photographed. The integral line intensity s was determined as a product of line width ΔH and amplitude I. For the large crystal up to $T \approx 0.35^{\circ}K$, $s = const/(T+\theta)$, where $\theta = 0.35^{\circ}K$. Below that temperature s dropped faster than according to this law and it reached zero at $T \approx 0.18^{\circ}K$. The main change in s was observed between 0.2 and $0.3^{\circ}K$. The curve $s=s(1/T)$ did not depend on the orientation of the crystal with respect to the magnetic field, the position of its maximum was independent of T within 10% limits of error. As the imaginary part of the magnetic susceptibility had a single maximum at about $\nu_0 = g\beta H/h$, $s = \chi''(\nu)d\nu$, and, according to Kramers-Kronig, the static susceptibility $\chi_0 = \chi'(0) = \frac{2}{\pi}\int_0^{\infty}\frac{\chi''(\nu)d\nu}{\nu}$, or, if $\Delta\nu \ll \nu_0$: $\chi_0 = 2s/\pi\nu_0$. Therefore the relation $s=const/(T+\theta)$ expresses the Curie-Weiss law, θ being the paramagnetic Curie point. Since $\Delta\nu = 2\langle\Delta\nu^2\rangle/\nu_k$ where ν_k is proportional to the exchange integral

Card 2/3

Antiferromagnetism of free ... S/056/62/043/006/023/067
B102/B104

(Rev.Mod.Phys., 25, 269, 1953) one can determine the magnitude of exchange interaction from the e.p.r. line width. There are 3 figures.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR (Physics Institute imeni P.N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: July 24, 1962

Card 3/3

FEDOROV, V. B., and AKIMOV, V. I.

"Determination of the true heat capacity of metals at high temperatures"

Seminar on production methods, physical properties, and electron structure of refractory metals, compounds, and alloys, organized by the Institute of Powder Metallurgy and Special Alloys AS Ukr SSR, Kiev, 25-29 April 1963. (Teplofizika vysokikh temperatur, No. 1, 1963, p. 156)

USSR

ACCESSION NR: AP3008382 S/0286/63/000/014/0039/0039

AUTHOR: Fedorov, V. B.; Neplyuyev, L. N.

TITLE: Multiplying multicavity klystron. Class 21, No. 155877

SOURCE: Byulleten' izobret. i tovarn. znakov, no. 14, 1963, 39

TOPIC TAGS: multiplying multicavity klystron, multiplying klystron, multicavity klystron, klystron, short pulse klystron, low duty factor pulse

ABSTRACT: This Author Certificate introduces a multiplying multicavity klystron (Fig. 1 of Enclosure). To obtain short pulses with a low duty factor, the klystron cavities are tuned to the harmonic frequencies of the electron beam bunched in the input cavity. Through attenuators and phase inverters, the cavities are connected to a harmonics adder, which uses either directional couplers or a hybrid ring. Orig. art. has: 1 figure.

ASSOCIATION: none

Card 1/3

ACCESSION NR: AP3008382

SUBMITTED: 20Sep61 DATE ACQ: 29Oct63 ENCL: 01

SUB CODE: SD NO REF SOV: 000 OTHER: 000

Card 2/3

ACCESSION NR: AP3008382 ENCLOSURE: 01

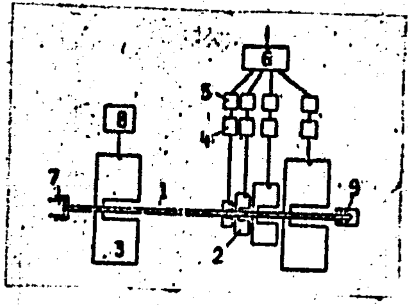


Fig. 1. Multiplying multicavity klystron

1 - Short low-duty factor pulse; 2 - cavities; 3 - input cavity; 4 - attenuators; 5 - phase inverters; 6 - adder; 7 - electron gun; 8 - hf oscillator; 9 - catcher.

Card 3/3

L 14522-63 EWP(k)/EWT(1)/BDS/3w2/EEC(b)-2/ES(t)-2
RADC/APGC/AFWL Pf-4/Pi-4 GG/JHB/WG/IJP(C)/K/EH AFFTC/ASD/ESD-3/
ACCESSION NR: AP3004898
S/0120/63/000/004/0098/0103

AUTHOR: Fedorov, V. B.

83
28

TITLE: Spectroscope for observation of electron paramagnetic resonance at temperatures below 1K

21

SOURCE: Pribory* i tekhnika eksperimenta, no. 4, 1963, 98-103

TOPIC TAGS: EPR spectroscope, electron-paramagnetic-resonance spectroscope, ultralow-temperature EPR spectroscope, low-temperature EPR spectroscope, paramagnetic-resonance spectroscopy

ABSTRACT: An EPR spectroscope designed for use at ultralow temperatures is described. The device uses a helium-filled glass dewar flask with a nitrogen jacket to contain the LC circuit. The coil of the LC circuit, placed in a vacuum chamber immersed in liquid helium, contains within it the crystal or crystalline powder sample. The coil maintains good thermal contact with the liquid helium. The coaxial feeder bringing the ends of the coil through the lid of the dewar flask provides the capacitance. The sample is cooled by a copper thermal connector leading from the sample to a block of paramagnetic salt cooled by adiabatic demagnetization to temperatures of 0.15—4.2K. The LC circuit in the

21

Card 1/2

L 14522-63

ACCESSION NR: AP3004898

5

dewar flask is activated by an oscillator operating at 42 Mc. Resonance absorption of the RF magnetic field by the sample decreases the Q of the circuit and results in a change of oscillator amplitude. The detected signal is amplified by a d-c amplifier and registered by an oscilloscope. The device is designed for the study of electron paramagnetic resonance phenomena at temperatures below 1K that are relevant to problems of spin-lattice relaxation mechanisms in solid paramagnetics and for investigation of magnetic resonance in substances with a Curie point below 1K. "The author thanks B. N. Samoylov for information on a number of devices used in magnetic cooling, which advanced his work considerably, and also thanks B. V. Yershov and K. N. Bol'shakov who took part in the construction and adjustment of the apparatus. The participation and interest in the work shown by A. M. Prokhorov was of great importance to the author." Orig. art. has: 3 figures and 3 formulas.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute, AN SSSR)

SUBMITTED: 00

DATE ACQ: 28Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 004

OTHER: 005

Card 2/2

L 17631-63 EFR/EPF(c)/EWT(l)/EWT(m)/BDS/ S/056/63/044/003/052/053
EEC(b)-2 AFFTC/ASD/ESD-3/RADC/AFWL/IJP(C) Ps-4/Pr-4/Pi-4 GG/RM/WW/JW/JFW

83

AUTHOR: Prokhorov, A. M. and Fedorov, V. B.

TITLE: Supplement to the paper "The antiferromagnetism 21 of free radicals" /1/

PERIODICAL: Zhurnal eksperimental'noy i tekhnicheskoy fiziki, v. 44, no 3, 1963, 1125-1126

TEXT: The authors state the relation existing between the Curie temperature and the width of the paramagnetic resonance absorption line, which agrees with the experimental data in the paper mentioned in the title (Ref. 1: Prokhorov and Fedorov, ZhETF, 43, 2105, 1962) and which concerns the $\alpha \alpha$ - diphenil-β - picril-hydrazil at 1 and 77°K. Further discussion of the changes in the absorption width and Curie temperature as function of temperature and the study of the corresponding crystal lattice indicate that the $\alpha\alpha$-dyphenil-β-picril-hydrazil represents at and below helium temperature a system of magnetic moments closely resembling an assembly of parallel linear chains. There is 1 figure.

SUBMITTED: December 24, 1962

Card 1/1

SPIRIDONOV, A.A.; FEDOROV, V.B.

Surface quality and productivity in using the static method of surface hardening. Trudy Ural. politekh. inst. no.129: 5-14 '63

(MIRA 17:8)

L 3[illegible]-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) Pf-4 JD/HM

[illegible]/63/000/129/0038/0043

A[illegible] NR. AT[illegible]04654

B+1

AUTHOR: Fedorov, V. B.

TITLE: Steel hardening by centrifugal ball treatment

[illegible] Sverdlovsk. Ural'skiy politekhnicheskiy institut. Trudy, no. 129, 1963. Proizvoditel'nost' i kachestvo poverkhnosti [illegible] (Productivity and surface quality in machining), 38-43

6

TOPIC TAGS: hardening method, work hardening, 10 steel hardening, metal surface, surface hardening

ABSTRACT: The essence of centrifugal ball hardening consists of striking the surface of the part with small spheres which are loosely set in hollows in a rapidly rotating hardener. All sections of the surface are subjected consecu[illegible] these blows, which are applied at a high frequency. The operating [illegible] for centrifugal ball hardening are determined by [illegible] independent factors. 1) the striking force of the ball [illegible]

Card 1/3

L 39298-65
ACCESSION NR: AT5004654

0

2) the number of blows per unit of area of the surface being treated. The [illegible] the hardened layer is determined first [illegible] energy and to a lesser degree by the number of blows per unit area. The number of blows has practically no effect when hardening soft steels. For practical purposes, an increase in the impact energy increases the depth of the hardened layer only up to a definite limit, since the increase in the volume of metal which is subjected to plastic deformation stops the increase of the effective [illegible] the impact [illegible] hardening with [illegible]

[illegible]

Card 2/3

L 3298-65

ACCESSION NR: AT5004654

1

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: MM,IE

NO REF SOV: 002

OTHER: 000

Shot peening 18

Card 3/3 JC

ACCESSION NR: AP4044530 S/0294/64/002/004/0628/0633

AUTHORS: Platunov, Ye. S.; Fedorov, V. B.

TITLE: The application of photographic pyrometry to investigations on thermal properties

SOURCE: Teplofizika vy*sokikh temperatur, v. 2, no. 4, 1964, 628-633

TOPIC TAGS: pyrometry, thermal property, tungsten, photography/ Konvas A movie camera, AM 1 film, OP 48 pyrometer

ABSTRACT: Errors in measurements of thermal conductivity increase with rise in temperature. The methods employed (thermoelectric, visual, photoelectric, and photographic) are not of equal value. The authors discuss briefly some inadequacies of various methods. They believe that the photographic method offers the greatest promise. This method reduces chiefly to measuring the luminosity of an investigated light source on the surface of a photographic plate sensitive to a narrow spectral band. Evaluation involves comparison of the density of an image produced on the film by a standard source (temperature lamp) with the density produced by the investigated object. The proper narrow segment of the spectrum is selected by means of a filter. The authors used a Konvas-A movie camera for their work, in combination with AM-1 film. The method was tested by investigation of the thermal

Card 1/2

ACCESSION NR: AP4044530

conductivity and specific resistance of tungsten in the temperature interval 1000-3000C. Results were in good agreement with control data obtained from a pyrometer of the OP-48 series. Differences in values of thermal conductivity did not exceed ± 7-10%. The results show that the thermal conductivity of tungsten increases with rise in temperature, as shown by a number of other workers, and the values are in good agreement with the measurements of others. Orig. art. has: 4 figures, 2 tables, and 5 formulas.

ASSOCIATION: Leningradskiy institut tochnoy mekhaniki i optiki (Leningrad Institute of Precision Mechanics and Optics)

SUBMITTED: 20Mar64 ENCL: 00

SUB CODE: TD, ES NO REF SOV: 008 OTHER: 002

Card 2/2

ACCESSION NR: AP4011756 S/0181/64/006/001/0193/0199

AUTHORS: Gasanov, E. M.; Prokhorov, A. M.; Fedorov, V. B.

TITLE: Paramagnetic relaxation in systems with strong exchange interaction at low temperatures

SOURCE: Fizika tverdogo tela, v. 6, no. 1, 1964, 193-199

TOPIC TAGS: paramagnetic relaxation, exchange interaction, low temperature, Alpha Alpha diphenyl Beta picrylhydrazine, magnetic ordering, absorption line, integral intensity, Zeeman subsystem, exchange subsystem

ABSTRACT: In experiments on electron paramagnetic resonance in the free organic radical $\alpha\alpha$-diphenyl-β-picrylhydrazine at 42 Mc the authors observed, along with an increase in absorption line width, an increase in relaxation time between Zeeman and exchange subsystems when the temperature was reduced from 77 to 1.5K. According to theory and some experiments, at extremely cold temperatures the relaxation time should become shorter when the width of the line is increased. The discrepancy between experiment and theory is apparently due to the difference between properties of the spin systems in the organic crystal studied and those of a

Card 1/2

ACCESSION NR: AP4011756

purely paramagnetic system. This difference appears in local magnetic ordering of spins at low temperatures, which is associated with increases in the value I/kT→1 but which is not substantial in experiments at frequencies on the order of 10,000 Mc with a large external magnetic field. This local ordering is indicated by a decrease in the integral intensity of the absorption line at temperatures of about 2.0K. Near magnetic ordering indicates the introduction of a correlation between the exchange interaction of various spin pairs, and, consequently, diminishes (for constant intensity) characterizing an exchange constriction of the absorption line. An increase in relaxation time means an increase in the characteristic frequency of the exchange subsystem in which the relaxation process occurs; given magnetic ordering, which changes the energy spectrum of the exchange system, this increase in frequency may be considered probable. Orig. art. has: 2 figures and 15 formulas.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moscow (Physics Institute AN SSSR)

SUBMITTED: 22Jul63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 003 OTHER: 011

Card 2/2

[illegible]-65 EWA(k)/EWT(l)/EEC(k)-2/T/EEC(b)-2/EWP(k)/EWA(m)-2 Po-[illegible]/Pi-4/Pl-4
[illegible] AS(mp)-2 [illegible]
AP4042550 [illegible] 1962

[illegible] Prokhorov, A. M.; Fedorov, V. B.

[illegible] Paramagnetic relaxation in $K_3(Fe, Co)(CN)_6$ at [illegible] temperatures 0.1-4.2K

[illegible] eksper. i teor. fiz., v. 46, [illegible]

[illegible] paramagnetic relaxation [illegible]

In view of the increasing applications of paramagnetic [illegible] the increasing practical [illegible] paramagnetic relaxation at low temperatures, the authors measured [illegible] method of continuous saturation of the 42 Mc EPR absorption [illegible] dependence of the magnetic spin-lattice relaxation time of

[illegible] 1/4

[illegible]

AP4042550

[illegible] at ~10 mcs, the results [illegible] magnetic relaxation theory of Van Vleck and Kronig. It is shown that the observed singularities of paramagnetic relaxation in ferrocyanide at low temperatures are due to weak exchange interactions in the system of paramagnetic ions of iron. These interac- [illegible] an important role in [illegible] frequencies. The [illegible] pairs in the cyanide of iron is used to develop, [illegible] certain assumptions, a mechanism for [illegible] qualitatively the experimen[illegible] -phonon spin-lattice interaction of ion pairs in the case of strong exchange bond between the iron ions (compared with the Zeeman energy) is developed. The results of the theoretical calculation confirm the assumptions made to interpret the experimental facts, and also give satisfactory values for the probabilities of

Card 2/4

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3

nonradiative transitions of the ion pairs. A decisive role is indi- [illegible] pairs in the transfer of energy from [illegible] low temperatures in low-frequency [illegible] authors thank K. K. Svidzinskiy for a discussion and valuable remarks, and B. V. Yershov for great help with the measurement and data [illegible] Orig. art. has: 3 figures and [illegible] formulas.

[illegible] Fizicheskiy institut im. P. N. Lebedeva Akademii nauk [illegible]

NO REF [illegible]

ACCESSION NR: AP4042550

ENCLOSURE: 01

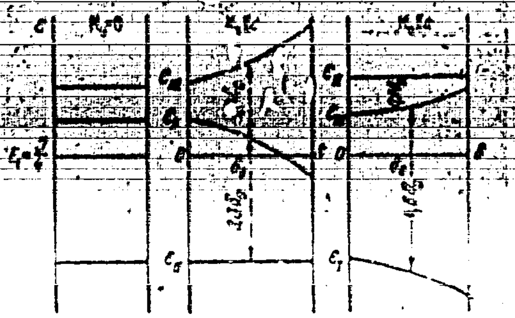

Fig. 1

Energy level scheme of ion pair in state S = 1 as a function of [illegible] splitting of the isolated ion. The arrows indicate the transitions that play the principal role in the transfer of the energy from the isolated ions to the lattice

Card 4/4

L 2972-66 EWA(k)/FBD/EWT(l)/EEC(k)-2/T/EWP(k)/EWA(m)-2/EWA(h) SCTB/IJP(c) WG

ACCESSION NR: AP5021726 UR/0386/65/002/002/0058/0063

57
55
13

AUTHOR: Yeliseyev, P. G.; 44 Novikov, A. A.; 44 Fedorov, V. B. 44

TITLE: The effects of optical interaction of two diode lasers 25,44

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 2, no. 2, 1965, 58-63

TOPIC TAGS: laser, diode laser, gallium arsenide, gallium arsenide laser, injection laser, semiconductor laser, optical interaction

ABSTRACT: The optical interaction of two diode lasers placed less than 5 μ apart was studied experimentally. The gallium arsenide p-n diodes obtained by cleaving a single crystal into two parts 425 and 1450 μ long, were placed in the same plane in liquid nitrogen and pumped by square-wave current pulses with an amplitude of 0.5—2.5 amp and a duration of 1.5 μsec from two oscillators. The emission spectra were observed by means of ISP-51 and DFS-8 spectrographs and were recorded by an FEU-22 photomultiplier. The emission spectra of the 425-μ (short) and 1450-μ (long) diodes were in the λ_{short} = 8420—8435 Å and λ_{long} = 8465—8478 Å regions, respectively, and consisted of modes spaced 1.7 Å and 0.8—0.9 Å apart, respectively. The optical interaction was evidenced when during the pulse coincidence the relative

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maxima of the λ_{short} and λ_{long} lines changed correspondingly; moreover, a decrease in the λ_{short} and an increase in the λ_{long} line intensities were observed from the short diode side, while an increase in the intensity of both lines was observed from the long diode side. Thus, the optical interaction effect, as observed from the short diode side, was the decrease in line intensity from the short diode side due to the introduction of an external emission into its active medium, and, from the long diode side, an increase in the intensities of both lines due to the time coincidence of pumping pulses. The optical interaction is further explained in terms of the effect of coupled modes on the population of the energy levels. Orig. art. has: 2 figures. [YK]

ASSOCIATION: Institut tochnoy mekhaniki i vychislitel'noy tekhniki Akademii nauk SSSR (Institute of Pure Mechanics and Computer Technology, Academy of Sciences, SSSR) 44

SUBMITTED: 25May65

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SUB CODE: EC, OP

NO REF SOV: 000

OTHER: 005

ATD PRESS: 4109

BVK

Card 2/2

EEC(b)-2 EWA(h) Pm-4/Pac-4/Peb Pi-4

B

AUTHOR: Klimenko, I. S.; Fedorov, V. B.

TITLE: Optimal pumping in a quantum paramagnetic amplifier

SOURCE: Radiotekhnika i elektronika, v. 10, no. 4, 1965, 768-770

TOPIC TAGS: paramagnetic amplifier, quantum amplifier

ABSTRACT: A three-level quantum paramagnetic amplifier with a reflector-type [illegible] at a pumping frequency coinciding with the auxiliary frequency ν_{31} is theoretically considered. It is proved that with a [illegible] reversed difference of [illegible]

Card 1/2

L 47806-65
ACCESSION NR: AP5010114

ASSOCIATION: none

[illegible]4 ENCL: 00 SUB CODE: [illegible]

OTHER: 000

PROSKURYAKOV, Yu.G.; SHNEYDER, Yu.G., kand. tekhn. nauk, retsenzent; MALOV, A.N., prof., retsenzent; FEDOROV, V.B., kand. tekhn. nauk, retsenzent; STESHENKO, N.N., inzh., red.

[Hardening and sizing working methods] Uprochniaiushche-kalibruiushchie metody obrabotki; spravochnoe posobie. Moskva, Mashinostroenie, 1965. 205 p. (MIRA 19:1)

ACC NR: AP7005580 SOURCE CODE: UR/0020/67/172/002/0309/0312

AUTHOR: Yershov, B.V.; Pimenov, Yu.P.; Fedorov, V.B.; Prokhorov, A.M. (Academician)

ORG: Physics Institute im. P.N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Two-photon absorption of CaF_2: Ho^{+++} crystals

SOURCE: AN SSSR. Doklady, v. 172, no. 2, 1967, 309-312

TOPIC TAGS: calcium fluoride, holmium, two photon absorption, luminescence, crystal impurity, PHOTON, LASER RADIATION

ABSTRACT:

An investigation was made of artificially grown CaF_2 crystals containing 0.3 wt% Ho^{+++}. The samples were cylindrical, 1 cm in diameter and 4—5 cm long. They were irradiated, either separately or simultaneously, by a ruby laser and an Nd-glass laser with pulses of 7.8 and 11.3 joules, respectively. Pulse duration was in the millisecond range. The two-photon processes were detected by the green luminescence (λ = 5512 Å) arising after preliminary nonradiative transition from a two-photon-excited absorption level to the initial level $^5S_2$ of this line. The observed two-photon transitions were of three kinds, corresponding respectively to the absorp-

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ACC NR: AP7005580

tion of 2 ruby photons, 2 Nd-glass photons, and 1 ruby photon and 1 Nd-glass photon. As in experiments on CaF_2 : Eu^{++}, in which two-photon absorption was first reported [W. Kaiser, C. G. B. Garrett, Phys. Rev. Letters, 7, 1961, p. 229], the nonlinearity of intensity relationships was one of the validity criteria for the assumption of a two-photon mechanism: with only one laser luminescence grew with the square of the irradiation intensity; with two lasers, its magnitude was greater than the sum of the separate effects of each laser. Oscillograms showed that the Nd-glass luminescence lagged approximately 10^{-3} sec behind the ruby luminescence, which indicates a relative slowness of the transition from the $^5F_4$ absorption level to the $^5S_2$ initial level of the green line. The relative timing of the laser pulses could be adjusted by selection of a suitable circuitry. Stimulated luminescence of CaF_2 : Ho^{+++} at 77°K was previously demonstrated by Yu. K. Voron'ko, A. A. Kaminskiy, V. V. Osiko, and A. M. Prokhorov (Pis'ma ZhETF, v. 1, no. 1, 1965, p. 5). Orig. art. has: 2 figures. [JM]

SUB CODE: 20/ SUBM DATE: 12Nov66/ ORIG REF: 002/ OTH REF: 003/
ATD PRESS: 5116

Card 2/2

Fedorov, V.E

V.E. Fedorov, V.I. Akimov. Heat capacity of metals at high temperatures.

Title: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963)

Source: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

FEDOROV, V.B.

Optimum detection of a radar signal using several receiving channels. Radiotekhnika 17 no.9:60-67 S '62. (MIRA 15:9)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva radiotekhniki i elektrosvyazi imeni Popova.
(Radio direction finders) (Radar)